

## CLAIMS

What is claimed is:

*Sub B*  
1 1. A mammalian culture medium supplement comprising recombinant human albumin and fermented hyaluronan, wherein the supplement increases the viability of gametes or embryonic cells cultured in a medium containing the supplement.

*Sub B*  
2 2. The supplement according to claim 1 further comprising citrate.

*Sub B*  
3 3. The supplement according to claim 1, wherein the supplement is free from one or more of non-recombinant macromolecules, non-recombinant human albumin, hyaluronan derived from a warm-blooded vertebrate and combinations thereof.

*Sub B*  
4 4. The supplement according to claim 1, wherein the recombinant human albumin is present in a range of about 0.5 mg/ml to about 5.0 mg/ml when added to a medium.

*Sub B*  
5 5. The supplement according to claim 1, wherein the fermented hyaluronan is present in a range of about 0.1 mg/ml to about 1.0 mg/ml when added to a medium.

*Sub A*  
1 6. The supplement according to claim 1, wherein the citrate is present in a range of about 0.1 mM to about 1.0 mM when added to a medium.

1 7. The supplement according to claim 1 further comprising a medium that can support embryo or cell development, the medium selected from the group consisting of G1.2/G2.2, KSOM/KSOMaa, M16, SOF/SOFaa, MTF, P1, HTF, Earle's, Hams F-10, M2, Hepes-G1.2, Whitten's and PBS.

1 8. The supplement of claim 7 wherein the medium that can support cell development supports embryo development.

1 9. The supplement of claim 7 wherein the medium that can support cell development supports mammalian stem cell development.

*Sub A<sup>2</sup>* 1) 10. A mammalian culture medium comprising recombinant human albumin and a

2) medium that can support cell development

1 11. The mammalian culture medium according to claim 10 further comprising  
2 citrate.

1 12. The mammalian culture medium according to claim 10 further comprising  
2 fermented hyaluronan.

1 13. The mammalian culture medium according to claim 11 further comprising  
2 fermented hyaluronan.

1 14. The mammalian culture medium according to claim 12, wherein the fermented  
2 hyaluronan is present in a range of about 0.1 mg/ml to about 1.0 mg/ml based on the total  
3 volume of the mammalian culture medium.

1 15. The mammalian culture medium according to claim 11, wherein the citrate is  
2 present in a range of about 0.1 mM to about 1.0 mM based on the total volume of the  
3 mammalian culture medium.

1 16. The mammalian culture medium according to claim 10, wherein the recombinant  
2 human albumin is present in a range of about 0.5 mg/ml to about 5.0 mg/ml based on the  
3 total volume of the mammalian culture medium.

*Sub A<sup>3</sup>* 1) 17. A mammalian culture medium comprising fermented hyaluronan and a medium  
2 that can support cell development.

1 18. The mammalian culture medium according to claim 17 further comprising  
2 citrate.

1 19. The mammalian culture medium according to claim 17, wherein the fermented  
2 hyaluronan is present in a range of about 0.1 mg/ml to about 1.0 mg/ml based on the total  
3 volume of the mammalian culture medium.

1 20. The mammalian culture medium according to claim 18, wherein the citrate is  
2 present in a range of about 0.1 mM to about 1.0 mM based on the total volume of the  
3 mammalian culture medium.

1 / 21. A method of producing a supplement for a mammalian culture medium  
2 comprising adding recombinant human albumin to either water, saline or medium to make a  
3 supplement for a mammalian culture medium.

1 22. The method of producing a supplement for a mammalian culture medium of  
2 claim 21 further comprising adding fermented hyaluronan.

1 23. The method of producing a supplement for a mammalian culture medium of  
2 claim 21 further comprising adding citrate.

1 / 24. A method of producing a supplement for a mammalian culture medium  
2 comprising adding fermented hyaluronan to either water, saline or medium to make a  
3 supplement for a mammalian culture medium.

1 25. The method of producing a supplement for a mammalian culture medium of  
2 claim 24 further comprising adding citrate.

1 / 26. A kit for supplementation of mammalian culture medium, comprising:  
2 (a) one or more ingredients selected from the group consisting of mammalian  
3 culture medium, recombinant human albumin, fermented hyaluronan, citrate and  
4 combinations thereof; and  
5 (b) instructions for use of the kit.

1 27. The kit according to claim 26, wherein the kit comprises a mammalian culture  
2 medium, wherein the mammalian culture medium is free from one or more of non-  
3 recombinant macromolecules, non-recombinant human albumin, and non-fermented  
4 hyaluronan.

1 28. The kit according to claim 26, wherein the instructions provide how to make a  
2 mammalian culture medium that is free from one or more of non-recombinant  
3 macromolecules, non-recombinant human albumin, and non-fermented hyaluronan.

1 29. The kit according to claim 26, wherein the instructions teach how to make a  
2 mammalian culture medium comprising one or more of recombinant human albumin in an  
3 amount of about 0.5 mg/ml to about 5.0 mg/ml, fermented hyaluronan in an amount of  
4 about 0.1 mg/ml to about 1.0 mg/ml, citrate in a concentration of about 0.1 mM to about  
5 1.0 mM, and combinations thereof, based on the total weight of the mammalian culture  
6 medium.

1 30. A mammalian culture medium consisting essentially of:

2 (a) a medium that can support mammalian cell development;  
3 (b) recombinant human albumin in an amount from about 0.1 mg/ml to about 20.0  
4 mg/ml;  
5 (c) fermented hyaluronan in an amount from about 0.1 mg/ml to about 5.0 mg/ml;  
6 and  
7 (d) citrate in a concentration from about 0.1 mM to about 5.0 mM.

1 31. The culture medium according to claim 30, wherein the medium that can support  
2 embryo or cell development is selected from the group consisting of G1.2/G2.2,  
3 KSOM/KSOMaa, M16, SOF/SOFaa, MTF, P1, HTF, Earle's, Hams F-10, M2, Hepes-  
4 G1.2, Whitten's and PBS.

1 32. The culture medium according to claim 30, wherein the culture medium is free  
2 from one or more of non-recombinant macromolecules, non-recombinant human albumin,  
3 hyaluronan derived from a warm-blooded vertebrate and combinations thereof.

1 133. A mammalian culture medium supplement consisting essentially of:  
2 (a) recombinant human albumin in an amount from about 0.125 mg/ml to about  
3 20.0 mg/ml;  
4 (b) fermented hyaluronan in an amount from about 0.1 mg/ml to about 5.0 mg/ml;  
5 and  
6 (c) citrate in a concentration from about 0.1 mM to about 5.0 mM.

1 34. A method of increasing the viability of embryonic cells comprising culturing an  
2 embryo in the mammalian culture medium of claim 10, wherein the viability of the embryo  
3 is increased.

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